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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/719,854	02/20/2001	Takaaki Maekawa	2000-1716A	4895

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EXAMINER
LEADER, WILLIAM T

ART UNIT	PAPER NUMBER
1742	

DATE MAILED: 06/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/719,854	MAEKAWA ET AL.	
	Examiner	Art Unit	
	William T. Leader	1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-25 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-25 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. Claim 1 recites that the floats are disposed at least any of front/back and left/right in a flowing direction of the flowing water. However, no structure of the apparatus has been recited to allow determination of the direction of flowing water. Claim 1, line 3 refers to the positive electrode plate being "disposed in an upper face". The intended meaning of "upper face" is not clear. Claim 5 refers to "a positive electrode plate back face upper portion". It is not clear what region of the positive electrode plate this refers to. "Back face" and "upper portion" has not been defined. Claim 9 recites "a positive electrode substance". The meaning of this expression is not clear. Is the substance the material from which the positive electrode plate itself is made? Claim 11 also refers to "a positive electrode substance". Is it a material coated onto the positive electrode plate? Claim 13 recites a gas seal in the positive electrode plate. It is not clear what the plate seals against. Claim 15 recites that the dipped depth of the positive electrode plate from

the water surface is 1/5-1/10 of the water depth. Since the water depth is a parameter determined during use of the apparatus, this limitation is considered to be indefinite. No structure has been recited to allow determination of the water depth. Claim 20 recites that the height of protrusions is 10-15% of a distance between the positive electrode plate and the negative electrode plate. However, since the negative electrode plate is adapted to move vertically up and down, it is not clear how the distance between the positive and negative electrode plate is determined.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 2, 3, 4, 6, 7, 8, 11, 15 and 25 are rejected under 35 U.S.C. 102(b) as being anticipated by Deal (4,808,304).

6. The Deal patent is directed to apparatus for treating an aqueous liquid. Such as a slime from phosphate processing. The slime flow by gravity through pipe 14 into ponds 10, 11 and 12. Each pond has a flat earthen bottom 20 upon which a network of pipes 21 is arranged (column 4, lines 1-27). The sides 42 of the ponds

form flat top dikes 42. The slope of the sides may be varied to the point of becoming vertical and cast of concrete (column 4, lines 60-65). Electrode structure 47 is provided on the bottom of the pond and may be made of expanded metal in commercial widths (column 5, lines 33-40). Horizontal parallel opposing electrodes are floated on the water (column 5, lines 29-32). Slab-like buoyant supports 50 are shown in figure 4. A sheet of expanded metal providing the electrode is removably attached to the underside of support slab 55 (column 6, lines 52-62). A direct current of adjustable voltage was applied. (column 5, lines 23-24). See figure 5. The upper electrode is connected to the negative polarity of the power supply, while the lower electrode is connected to the positive power supply. Thus all elements recited in instant claim 1 are disclosed by Deal.

7. Claim 2 recites means for vertically moving the positive electrode plates. The buoyant slabs 55 provide means to vertically move the slab since the buoyant slabs will float on the water as the level rises and falls. The underside of the positive electrode expanded metal will itself collect gas bubbles as recited in claims 3 and 4. Deal discloses the positive electrode plate may be made of expanded metal such as aluminum or steel (column 6, lines 6-8), meeting the limitations of claims 6-8. The commercial widths of metal used by Deal would be placed side-by-side to cover the bottom of the ponds, meeting the limitation of claim 11 reciting plural positive electrode face portions. The upper electrodes of Deal are movable and capable of

being spaced from the lower electrodes to create a water depth meeting the limitation of claim 15. The method of using the apparatus as recited in claim 25 is clearly suggested by Deal.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 10 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Deal in view of Omasa (5,730,856)

11. Claims 10 and 16 differ from the apparatus of Deal by reciting particular materials, such as stainless steel, from which the electrodes are made. The Omasa patent is directed to the treatment of waste liquid and teaches that both anode and cathode electrodes may be made of stainless steel. See column 5, lines 16-20 and example 13. The prior art of record is indicative of the level of skill of one of ordinary skill in the art. It would have been obvious at the time the invention was made to have utilized stainless steel as the steel material from which the electrodes of Deal are made because it is a suitable electrode material as shown by Omasa.

12. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Deal in view of Guerini (5,772,859).

13. Claims 9 and 15 differ from Deal by reciting particular positive electrode substances and cathode materials. The Guerini patent is directed to a device for treating liquids and discloses that the anode may be made of platinum-plated titanium mesh, while the cathode may be made of stainless-steel (column 2, lines 49-53). It would have been obvious at the time the invention was made to have utilized platinum-plated titanium mesh as the anode material of Deal and stainless steel as the cathode material because Guerini teaches that these are effective electrode materials.

14. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Deal in view of Gui (5,569,809).

15. Claim 21 differs from Deal by reciting a mechanism for cleaning the electrodes. The Gui patent is directed to electrolytic treatment and discloses that electrode surface deactivation due to surface contamination can be overcome through mechanical electrode cleaning (column 8, lines 6-10). It would have been obvious at the time the invention was made to have provided a mechanism for cleaning the electrodes of Deal because deactivation due to contamination would have been overcome as taught by Gui.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William T. Leader whose telephone number is 703-308-2530. The examiner can normally be reached on Mondays-Thursdays and alternate Fridays, 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King, can be reached on 703-308-1146. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

William Leader
June 16, 2003

ROY KING
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700